



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,306	05/15/2006	Colin McKellar	3700.P0407US	8962
23474 7590 07/21/2008 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631				
EXAMINER NGUYEN, HAU H				
ART UNIT		PAPER NUMBER		
2628				
MAIL DATE		DELIVERY MODE		
07/21/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/564,306

Applicant(s)

MCKELLAR, COLIN

Examiner

HAU H. NGUYEN

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
Paper No(s)/Mail Date 1/10/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 1/10/2006 has been considered by the examiner.

Claim Objections

2. Claim 15 is objected to because of the following informalities: claim 15 has the limitation "a tile buffer", which is confusing and ambiguous because the examiner does not know whether it refers to the tile buffer as introduced in claim 14 or a different tile buffer. Appropriate correction is required. In the following rejection, the examiner relies on the form case, i.e. the same tile buffer as in claim 14.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanz-Pastor et al. (U.S. Patent No. 6,747,649, "Sanz-Pastor", hereinafter) in view of Ephanov (U.S. Patent No. 6,924,814).

As per claim 14, as shown in Fig. 12, Sanz-Pastor teaches *an apparatus to generate automatically a mipmap chain of texture images from a portion of texture image data for use in texturing a computer graphic image in a tile based rendering system comprising:*

means for supplying scene data (Fig. 2, image generator, see col. 8, lines 25-44);

means for breaking the scene data into a plurality of tiles (col. 5, lines 53-67);

means for storing the data of each tile in a tile buffer (Fig. 11a, Tile assembly buffer 1104, see col. 11, lines 42-55);

means for filtering the tile buffer contents for each tile in turn to generate at least one lower level of mipmap data from the scene data (Fig. 14, col. 14, lines 36-61);

means for temporarily storing each lower level of mipmap data in the tile buffer (see Fig. 12); *and,*

Although Sanz-Pastor fails to explicitly teach *means for storing each lower level of mipmap data in a system main memory*, Sanz-Pastor does teach the tile assembly buffer 1104 is a buffer allocated in a memory (col. 11, lines 5-6). Ephanov teaches a method of generating a mipmap of texture images in a tile-based texturing (see Figs. 1A-1E, and col. 3, lines 20-36, col. 6, lines 1-10, and col. 7, lines 40-45, also Fig. 13). As shown in Fig. 6, Ephanov further teaches the generated texture images can be stored in a texture memory 34, which is part of a main memory 30 (see col. 4, lines 55-60).

Since Sanz-Pastor suggested the tile buffer can be allocated in a memory, Ephanov teaches the texture buffer can be part of a main memory, it would have been obvious to one skilled in the art to utilize the method as taught by Ephanov to store the generated lower texture map in a main memory in combination with the method as taught by Sanz-Pastor in order to make use of available computer resources, i.e. not to use separate memory for texture storage.

As per claim 15, as cited above, Sanz-Pastor teaches *the tile buffer is used for temporarily storing image data prior to writing it to a frame buffer* (see Figs. 11a and 12).

As per claim 16, although Sanz-Pastor fails to explicitly teach *the frame buffer comprises a portion of the main memory*. However, it is well known in the art that frame buffer can be allocated in the main memory when a graphics processor does not have its own dedicated memory, such one as indicated in Ephanov where a portion of main memory is used to update frame data (see Figs. 6 and 9).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Ephanov in combination with the method as taught by Sanz-Pastor in order to make use of available computer resource (i.e. utilizing a portion of main memory as frame buffer).

As per claim 17, as cited above with reference to Fig. 12, Sanz-Pastor teaches *the filtering means also stores the lower level mipmap in the tile buffer prior to generation of a next lower mipmap level*.

Claims 18 and 19, which are similar in scope to claim 17, are thus rejected under the same rationale.

As per claim 20, as shown in Fig. 15, Sanz-Pastor teaches *the process repeats a predetermined number of times until all desired mipmap levels have been generated* (i.e. until all the layers (created as shown in Fig. 14) of the composite scene has been generated).

Claims 21 and 22, which are similar in scope to claim 20, are thus rejected under the same rationale.

Claims 23-25, which are similar in scope to claims 14, 16, and 20 respectively, are thus rejected under the same rationale.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hau H Nguyen/

Examiner, Art Unit 2628